Remarks

Claims 1-56 remain pending in this application after entry of this paper. Claims 1, 11, 17, 29, 39 and 45 have been amended to more particularly point out the invention. Claims 1, 17, 29 and 45 have been amended to clarify that the token bucket determines conformance of network traffic destined for the subscriber to allow action to be taken in a presence of non-conforming network traffic. These claims also have been amended to clarify that handled packets are destined for the subscriber, and handling packets includes determining conformance of network traffic destined for the subscriber. Claims 11 and 39 have been amended to clarify that the packets that arrive at the regulator are further handled in accordance with the second bucket arrangement, and to clarify that the second bucket arrangement is monitored as packets are handled to measure the demand.

Claims 11 and 39 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 11 and 39 have been amended to clarify the claimed subject matter, and overcome this rejection.

Claims 1 and 29 were rejected under 35 U.S.C. § 102(b) as being anticipated by Fichou et al. (U.S. Patent No. 6,118,791). These claims have been amended for clarity, and are believed to be patentable.

Regarding claims 1 and 29, these claims currently recite combinations including handling packets destined for the subscriber in accordance with the token bucket configuration, including determining conformance of network traffic destined for the subscriber, and dynamically adjusting the token bucket configuration for the token bucket associated with the subscriber based on the demand to affect the way that packets arriving at the regulator are handled.

Fichou describes an adaptive bandwidth allocation method for non-reserved traffic in a network. In more detail, Fichou is about matching traffic to the network. As

exemplified in Figure 3, leaky bucket 32 receives packets from a user, regulates the traffic, and sends non-discarded packets to the network. As exemplified in Figure 4 and described in column 6, lines 25-54, the leaky bucket mechanism includes two token pools. The green token pool is for reserved traffic while the red token pool is for non-reserved or discardable traffic. Fichou describes adaptive computation of $R_{k,t}$, the token (fill) rate of the red token pool.

However, claims 1 and 29 recite handling packets destined for the subscriber including determining conformance of network traffic destined for the subscriber. In contrast, Fichou describes handling packets from the user and destined for the network. Further, Fichou uses the leaky bucket to regulate the traffic by matching traffic from the user to the network, which is far different than the claimed feature of determining conformance of network traffic destined for the subscriber. To the extent that Fichou does describe an adaptive token fill rate, Fichou only describes adapting a parameter of a leaky bucket matching traffic from the user to the network, as opposed to dynamic adjustment of a token bucket configuration for a token bucket that determines conformance of network traffic destined for the subscriber.

For reasons given above, claims 1 and 29 are believed to be patentable.

Claims 21 and 49 were rejected under 35 U.S.C. § 102(e) as being anticipated by Thomas (U.S. Pub. No. 2003/0086140). These claims are also believed to be patentable.

Independent claims 21 and 49 recite a first token bucket using tokens to regulate the packet flow in terms of packet rate and a second token bucket using tokens to regulate the packet flow in terms of data rate such that a particular packet is subjected to handling in accordance with both the first token bucket and the second token bucket, in combination with other limitations. Thomas describes processing downstream packets of an optical network. Figure 5 does illustrate a policer 564 that may utilize first and second token bucket algorithms. For example, blocks 635 and 640 of Figure 6 illustrate regulation based on peak rate, and based on sustained rate/burst size. Nevertheless, the various arrangements in Thomas fail to suggest the claimed subject matter. The Examiner refers to page 14, section 163. This section

specifically notes that both token buckets in Thomas regulate the flow in terms of data rate (9 Mb/s and 6 Mb/s). The Examiner also directs attention to page 9, section 95. This section describes processing with the first and second token bucket algorithms in Thomas. As pointed out above, although Thomas does describe first and second token bucket algorithms, these teachings do not suggest the claimed subject matter wherein packet flow is regulated in terms of packet rate and data rate by first and second token buckets.

For reasons given above, claims 21 and 49 are believed to be patentable.

Claims 2-4, 9-10, 13, 30-32, 37-38 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fichou in view of Shorey (U.S. Patent No. 6,829,649). These claims are dependent claims and are also believed to be patentable.

Claims 5-8, 14-16, 33-36, and 42-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fichou in view of Shorey, and further in view of Wang (U.S. Patent No. 6,748,435). These claims are dependent claims and are also believed to be patentable.

Claims 17, 20, 45, and 48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fichou in view of Wang. Claims 17 and 45 recite, in combination with other limitations, handling packets destined for the subscriber, including determining conformance of network traffic destined for the subscriber, and dynamically adjusting the token bucket configuration. Wang does describe random early demotion, but fails to overcome the deficiency of the primary reference, Fichou. Claims 20 and 48 are dependent claims and are also believed to be patentable.

Claims 18-19 and 46-47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fichou in view of Wang, and further in view of Shorey. These claims are dependent claims and are also believed to be patentable.

Claims 23-27 and 51-55 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shorey in view of Jeffries (U.S. Pub. No. 2004/0062259). Independent claims 23 and 51 recite "the amount of tokens to be removed being based on the amount of the flow and being further based on a classification of the flow," in combination with other limitations. Claims 24-27 and 52-55 are dependent claims. Jeffries describes bandwidth dependent variation of the token increment rate. The Examiner refers to page 1, section 3. This section only describes general token bucket operation, and fails to suggest the claimed invention. In more detail, Jeffries describes varying the token increment rate in dependence on the bandwidth indicator. The Examiner has not pointed out any specific teaching of removing an amount of tokens based on the amount of flow and further based on a classification of the flow as recited by the claims.

Claims 28 and 56 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jeffries and Shorey, and further in view of Fichou. These claims are dependent claims and are also believed to be patentable.

The Examiner has indicated that claims 11-12, 22, 39-40, and 50 contain allowable subject matter. Applicants respectfully request that the Examiner reconsider this application, and allow claims 1-56.

A check in the amount of $450.00 is enclosed to cover the Petition fee. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,

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